What is claimed is:

1. A rotary electrostatic microactuator comprising a substantially planar substrate, a rotatable member overlying the substrate for rotation about an axis of rotation extending perpendicular to the planar substrate, at least one comb drive assembly extending substantially radially from the axis of rotation and having first and second comb drive members, the first comb drive member being mounted on the substrate, each of the first and second comb drive members being provided with arcuate comb drive fingers, first and second spaced-apart folded springs, the at least one comb drive assembly being disposed between the first and second folded springs, each of the first and second folded springs being substantially U-shaped and having first and second beam-like spring members extending substantially radially from the axis of rotation, each first spring member having a first end portion secured to the substrate and each second spring member having a second end portion secured to the second comb drive member for suspending the second comb drive member and the rotatable member over the substrate, the second comb drive member being movable in a direction of travel about the axis of rotation between a first position in which the comb drive fingers of the first and second comb drive members are not substantially fully interdigitated and a second position in which the comb drive fingers of the first and second comb drive members are substantially fully interdigitated whereby the first and second folded springs permit greater travel of the second comb drive member between its first and second positions so as to permit greater rotation of the rotatable member about the axis of rotation.

2. A microactuator as in Claim 1 wherein the at least one comb drive assembly has a length and the first and second folded springs each have a length approximating the length of the at least one comb drive assembly.

3. A microactuator as in Claim 2 each of the first and second spring members has a length approximating the length of the at least one comb drive assembly.

4. A microactuator as in Claim 1 wherein the planar substrate has an outer radial extremity and wherein the first end portion of each first spring member is secured to the outer

radial extremity of the planar substrate adjacent the second end portion of the second spring member.

5. A microactuator as in Claim 1 wherein the first spring member of each of the first and second springs has a second end portion and the second spring member of each of the first and second springs has a first end portion secured to such second end portion of the respective first spring member, an arcuate member overlying the substrate and extending at least partially around the axis of rotation for securing the second end portion of the first spring member of the first spring to the second end portion of the first spring member of the second spring for minimizing radial travel of the second comb drive member, the arcuate member being rotatable about the axis of rotation free of the rotatable member.

6. An electrostatic microactuator as in Claim 1 further comprising an additional comb drive assembly and having first and second comb drive members, the additional comb drive assembly extending substantially radially from the axis of rotation and disposed between the first and second springs, each of the first and second comb drive members of the additional comb drive assembly being provided with arcuate comb drive fingers, the first comb drive member of the additional comb drive assembly being mounted on the substrate, the second comb drive member of the additional comb drive assembly overlying the substrate and being suspended over the substrate by the second end portions of the second spring members of the first and second springs, the second comb drive member of the additional comb drive assembly being movable between a first position in which the comb drive fingers of the first and second comb drive members of the additional comb drive assembly are not substantially fully interdigitated and a second position in which the comb drive fingers of the first and second comb drive members of the additional comb drive assembly are substantially fully interdigitated, the second comb drive member of the additional comb drive assembly being in the second position when the second comb drive member of the first-named comb drive assembly is in the first position.

7. A microactuator as in Claim 6 wherein a plurality of such comb drive assemblies and such additional comb drive assemblies are disposed about the axis of rotation and in the aggregate subtend an angle of approximately 180° about the axis of rotation to form a semicircle

having a base extending substantially along a diameter of the semicircle, the axis of rotation being disposed adjacent the base at the center of the semicircle

8. A microactuator as in Claim 1 wherein a plurality of such comb drive assemblies are circumferentially disposed about the axis of rotation and a plurality of such first and second folded springs arranged in sets are circumferentially disposed about the axis of rotation, each of comb drive assemblies being disposed between the first and second folded springs of one of such sets.

9. A microactuator as in Claim 8 wherein the plurality of such comb drive assemblies are symmetrically disposed about the axis of rotation.

10. A rotary electrostatic microactuator comprising a substantially planar substrate, a rotatable member overlying the substrate for rotation about an axis of rotation extending perpendicular to the planar substrate and a plurality of comb drive assemblies, each of the comb drive assemblies having a first comb drive member mounted on the substrate and a second comb drive member, each of the first and second comb drive members being provided with arcuate comb drive fingers, first and second spaced-apart springs, each of the first and second springs having a first end portion secured to the substrate and a second end portion secured to at least one of the second comb drive members for suspending the second comb drive members and the rotatable member over the substrate, the second comb drive members being movable in a direction of travel about the axis of rotation between a first position in which the comb drive fingers of the first and second comb drive members are not substantially fully interdigitated and a second position in which the comb drive fingers of the first and second comb drive members are substantially fully interdigitated, the plurality of comb drive assemblies subtending an angle of approximately 180° about the axis of rotation to form a semicircle having a base extending substantially along a diameter of the semicircle, the axis of rotation being disposed adjacent the base at the center of the semicircle.

11. A microactuator as in Claim 10 wherein each of the first and second springs extends substantially radially from the axis of rotation and wherein the plurality of comb drive

assemblies include first and second comb drive assemblies disposed between the first and second springs.

12. A microactuator as in Claim 11 wherein the second comb drive member of the second comb drive assembly is in the second position when the second comb drive member of the first comb drive assembly is in the first position.

13. A microactuator as in Claim 10 wherein the first end portion of each of the first and second springs is secured to the substrate adjacent the axis of rotation.

14. A microactuator as in Claim 10 wherein the comb drive fingers of each of the first and second comb drive members have proximal and distal end portions, each of the proximal end portions having a width and each of the distal end portions having a width which is less than the width of the respective proximal end portion.

15. A microactuator as in Claim 10 wherein the comb drive fingers of the first comb drive member have varying lengths and wherein the comb drive fingers of the second comb drive member have varying lengths.

16. A microactuator as in Claim 10 wherein the comb drive fingers of at least one of the first and second comb drive members have respective ends, an imaginary line interconnecting the ends of the comb drive fingers being spaced apart from the axis of rotation.

17. A rotary electrostatic microactuator comprising a substantially planar substrate, a rotatable member overlying the substrate for rotation about an axis of rotation extending perpendicular to the planar substrate, first and second linear micromotors, each of the first and second micromotors having first and second spaced-apart springs and at least one comb drive assembly, the at least one comb drive assembly having first and second comb drive members, the first comb drive member being mounted on the substrate, each of the first and second springs having a first end portion secured to the substrate and a second end portion secured to the second comb drive member for suspending the second comb drive member over the substrate, each of

the first and second comb drive members being provided with comb drive fingers, the second comb drive member being movable in a linear direction of travel relative to the first comb drive member between a first position in which the comb drive fingers of the first and second comb drive members are not substantially fully interdigitated and a second position in which the comb drive fingers of the first and second comb drive members are substantially fully interdigitated, a first coupler for securing the second comb drive member of the first micromotor to the rotatable member and a second coupler for securing the second comb drive member of the second micromotor to the rotatable member whereby movement of the second comb drive members of the first and second micromotors to the second position causes the rotatable member to rotate about the axis of rotation.

18. A microactuator as in Claim 17 wherein the at least one comb drive assembly is disposed between the first and second springs.

19. A microactuator as in Claim 18 wherein the first and second springs of each of the first and second micromotors extend in a direction perpendicular to the direction of travel of the respective first and second micromotor.

20. A microactuator as in Claim 17 wherein the first and second couplers comprise first and second coupling springs.

21. A microactuator as in Claim 17 wherein the first and second micromotors are symmetrically disposed about the rotatable member.

22. A microactuator as in Claim 17 wherein the direction of linear travel of the first micromotor is parallel to the direction of linear travel of the second micromotor.

23. A microactuator as in Claim 22 wherein the first and second micromotors are in juxtaposition.

24. A microactuator as in Claim 17 wherein each of the first and second micromotors

has first and second of such comb drive assemblies, the second comb drive member of the additional comb drive assembly being in the second position when the second comb drive member of the first-named comb drive assembly is in the first position.